

CLAIMS:

1. A coupling device, comprising
a substrate (1),
a first conductive layer (2) covering a first surface of said substrate (1),
at least two electromagnetically coupled lines (3a, 3b) being provided opposite to said first surface and being covered by at least one cover layer (4, 5), wherein
at least one short-circuit stub (Stub B) is connected between at least one of said electromagnetically coupled lines and said first conductive layer.
2. A coupling device according to claim 1, wherein
said at least one cover layer (4, 5) is covered by a second conductive layer (2'), and
at least one short-circuit stub (Stub A, Stub B) is connected between at least one of said electromagnetically coupled lines and said second conductive layer.
3. A coupling device according to claim 2, wherein
an even number of electromagnetically coupled lines is provided, and the number of short-circuit stubs connected to said first conductive layer is equal to the number of short-circuit stubs connected to said second conductive layer.
4. A coupling device according to claim 1, wherein said short-circuit stub is connected to an electromagnetically coupled line at half the electrical length of said line.
5. A coupling device according to claim 1, wherein said short-circuit stub is buried in the layered structure of the coupling device.
6. A coupling device according to claim 1, wherein at least one capacitor (C1, C2, C3, C4) is connected between a first end of at least one of said at least two lines (3a, 3b) and said first conductive layer (2).
7. A coupling device according to claim 2, wherein at least one

capacitor (C1, C2, C3, C4) is connected between a first end of at least one of said at least two lines (3a, 3b) and said second conductive layer (2).

8. A coupling device according to claim 1, wherein said at least two lines (3a, 3b) are arranged at different distances from said first surface of said substrate (1).

9. A coupling device according to claim 8, wherein a difference between the distances in which said at least two lines (3a, 3b) are arranged from said first surface of said substrate (1) is determined by a thickness of a first cover layer (4) covering a first line (3b) of said at least two lines.

10. A coupling device according to claim 8, wherein a first line (3b) and a second line (3a) of said at least two lines are arranged such that they at least partly overlap each other.

11. A coupling device according to claim 9, further comprising a second cover layer (5) arranged to cover at least a second line (3a) of said at least two lines.

12. A coupling device according to claim 10, wherein the amount of overlap adjusts the degree of electromagnetic coupling between said at least two lines.

13. A coupling device according to claim 6, wherein said capacitor (C1, C4) is constituted by

a conductive member (Cp1, Cp4) facing a conductive layer (2), and

an electrical connection (W1, W4) from said first end of said at least one of said at least two lines (3a, 3b) to said conductive member (C1, C4).

14. A coupling device according to claim 13, wherein said connection is a via connection.

15. A coupling device according to claim 14, wherein the capacitance of said capacitor is determined by the area of said conductive member (P1, P4), the distance between said conductive member (P1, P4) and said conductive layer (2) covering said first surface of said substrate (1), and the dielectric constant of said substrate.

16. A coupling device according to claim 1, wherein said at least one cover layer (4, 5) is of the same material as said substrate (1).

17. A coupling device according to claim 1, wherein said substrate (1) is made of a dielectric material.

18. A coupling device according to claim 1, wherein said conductive layer (2, 2') is connectable to ground potential.

19. A coupling device according to claim 1, wherein a short-circuit stub is designed to have a specific impedance and electrical length.